Horizontal and Vertical Partitioning in Replica

Written by **Guest Authors** on **30 January 2003** | **0 Comments**
Tagged with **Replication**

This article was written by Lynn Zhu and Demico Quinn. They write "*Before c describe, we decided that this would be a great topic to write about and shar that there were not a lot of articles out there that focused on Replication. Mo studies where column and row filters were being used as an integral part of t article to be helpful and inspire readers to write more articles about Replicati*

Using Replication's Horizontal and Vertical partitioning capabilities t database environment

There are times that you may find yourself on a project where you have one subscribing databases. Often times, Replication is not looked at as a viable s attribute this to the "blood sweat and tears" that it took to get Replication in days are gone and Microsoft has only improved the way Replication works in the way we utilized the Horizontal and Vertical partitioning capabilities that M

To begin, we have company A, which sells it's products based on district as t

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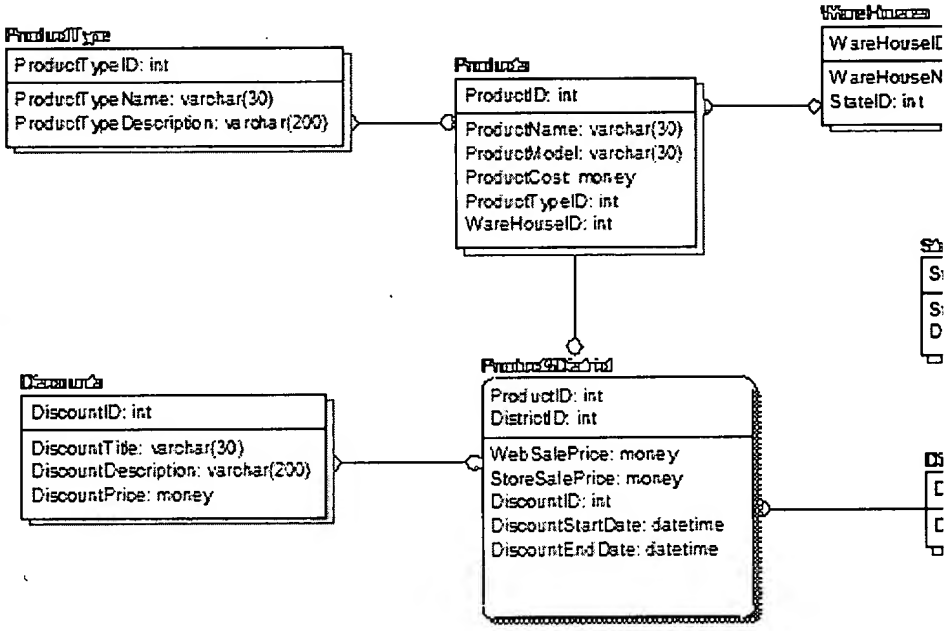
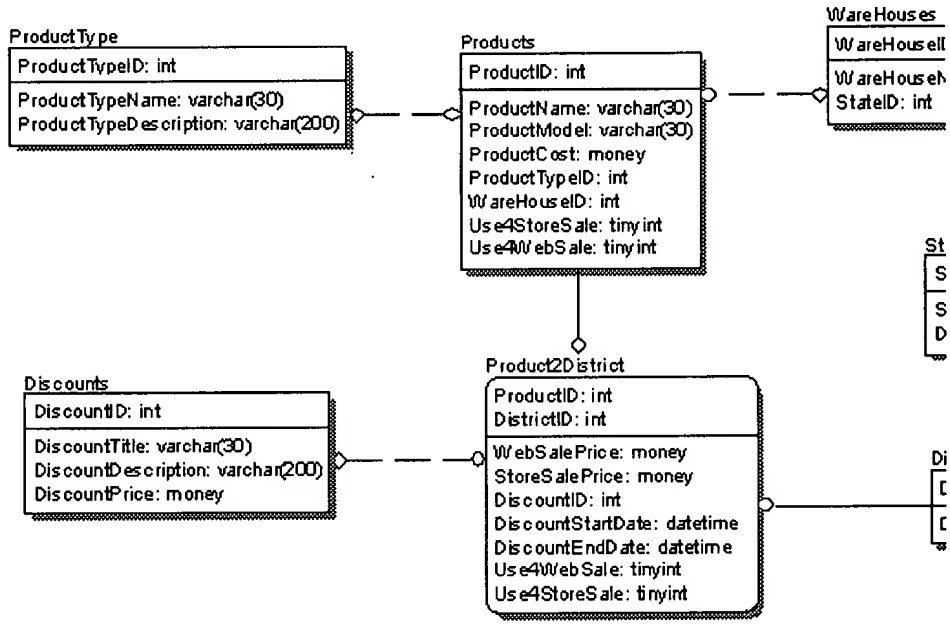


In this scenario a products given retail price may differ depending upon whet website or sold at one of our store locations. Additionally, a product can also districts, and be sold on either the web or in the store. Often times the disco not be applicable to "in store sales", and the same rule applies to discounts f

All transactions will write to one database, which will act as the publisher to called CentralInfo, and as earlier stated will act as the publishing database fc databases that will subscribe to publications that are based off of the Central needs the information about the products, web sale prices, and discounts tha StoreSale database only needs the information about the products, store sal the store by districts. To meet this business requirement we had to make so to restrict the rows and columns that will be defined in the publications, we a Use4StoreSale) to the Products and Products2District tables as row filters.



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(After adding Use4WebSale, and Use4StoreSale columns)

The filters are defined as integer data types and the default value for column given product is for web sales then the value of column Use4WebSale will be sales then the value of column Use4StoreSale will be updated to 1. For prod the value of both Use4WebSale and Use4StoreSale are set to 1. The followin

Product2Distirct:

productid	districtid	websaleprice	storesaleprice	discountid	discountstartdat
3	2	20	15	1	12/16/2002
4	2	30	25	2	12/25/2002
5	2	25	20	1	12/16/2002

Products:

productid	productname	productmodel	warehouseid	producttypeid	use4wel
3	Oil filter	RS-300	2	1	1
4	Side mirror	PA-100	2	2	0
5	Door Bulb	DB-022	1	3	1
6	Window Bulb	BW-012	1	3	0

Publications and Subscribers

There will be two publications and two subscribers to be set up.

1a. Store publication configurations

Now that we have established what changes needed to be made to the scher We will define store publication and identify the articles that will be used in t "Create Publication wizard" was used. And defined as follows:

Publication Name: CentralInfo_to_StoreSale

Publishing Database: CentralInfo

Articles:

Products
Products2Districts
Districts
States
WareHouses
Discounts
ProductType

Snapshot Options : The following options refer to the initial snapshot.

- *Drop existing tables and recreate*

- *Uncheck "Include declared referential integrity"*
- *Uncheck Clustered indexes*
- *Uncheck Non-clustered indexes*

After initial snapshot has been applied, the filters can be added to the article. You must also change the snapshot property to " Delete data in the existing the case where you have populated your CentralInfo database with data, you This will eliminate the need to run the initialization snapshot a second time. I

For the Products article add this row filter (table) Row Filter: Use4StoreSale =

```
Syntax: SELECT  <published_columns>
                FROM  <<TABLE>>
                WHERE   <TABLE>>.Use4StoreSale = 1
```

For the Products2Districts article add this row filter(table) Row Filter and Col

Under the Column filter tab for the article "Products2Districts", uncheck colu

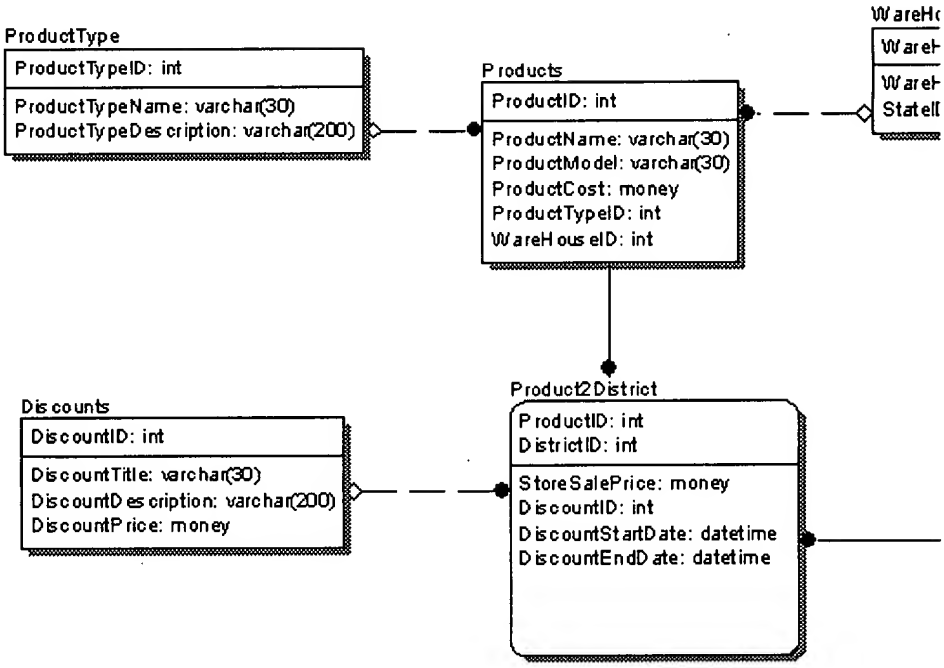
```
Syntax: SELECT  <published_columns>
                FROM  <<TABLE>>
                WHERE  <<TABLE>>.Use4StoreSale = 1
```

1b. Store subscriber configurations

The following describes the subscriber options that define how the StoreSale Database. The subscribing database can be created during the subscription p

```
Subscription name: Server name: StoreSale
Type: Push
Publish Interval: Optional
Scheme: Scheme is created by the Snapshot agent
```

Subscriber StoreSale:



2a. Web publication configurations

Now, we will define the web publication and identify the articles that will be u
Publication wizard" was used. And defined as follows:

Publication Name: CentralInfo_to_WebSale

Publishing Database: CentralInfo

Articles:

Products
Products2Districts
Districts
States
WareHouses
Discounts
ProductType

Note: The articles in this publication are the same as defined in our StoreSal
as you did for the StoreSale publication, the only exception will be to filter or

2b. Web subscriber configurations

The following describes the subscriber options that define how the WebSale c
Database. The subscribing database can be created during the subscription p

```
Name: SQLSERVERNAME: WebSale
Type: Push
```

Publish Interval: Optional
Scheme: Scheme is created by the Snapshot agent

Summary of implementation steps

The following is a step-by-step summary of the tasks performed in order to i

1. Run script to create the database scheme (CentralInfo)
2. Create Transactional Publication which includes the fo
2.1 Create StoreSale database
2.2 Define articles with article options
2.3 No article filters
3. Run Snapshot
4. Run distribution
5. Modify Transactional publication which includes the fo
5.1 Add filter to each article with the following "Use4St
5.2 Update Snapshot option to " Delete data in the existin that match the row filter statement"
5.3 Re-initialize the publication
6. Create Transactional Publication which includes the fo
6.1 Create WebSale database
6.2 Define articles with article options
6.3 No article filters
7. Run Snapshot
8. Run Distribution
9. Modify Transactional publication which includes the fo
9.1 Add filter to each article with the following "Use4Web
9.2 Update Snapshot option to " Delete data in the existin tables that match the row filter statement"
10. Re-initialize the publication
11. Run Snapshot (Once data has been mapped via the Custom
12. Run Distribution
13. Run scripts to load data into the CentralInfo database
14. Once data has been published to the subscribers, check to insure that the filters are working as expected.

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